

SR 522 - Cathcart Road Vicinity to US 2 Environmental Assessment



April 2008



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SR 522 – Cathcart Road Vicinity to US 2

Submitted By:

U.S. Department of Transportation, Federal Highway
Administration

Washington State Department of Transportation

Cooperating Agencies:

City of Monroe

Washington Department of Fish and Wildlife

Pursuant to:

The National Environmental Policy Act (NEPA) regulations
40 CFR 1500 to 1508, et al. and Federal Highway
Administration (FHWA) regulations and guidelines set forth in
23 CFR 771 and in Technical Advisory T6640.8A.

This action complies with Executive Order 11988 Floodplain
Management, Executive Order 11990 Protection of Wetlands,
Executive Order 12898 Environmental Justice in Minority and
Low-Income Populations, and Executive Order 13166
Improving Access to Services for Persons with Limited English
Proficiency.



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Federal Highway Administration

3/12/08

Date



Megan White, P.E.
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3/12/08

Date

Abstract:

This Environmental Assessment (EA) evaluates the safety improvement and congestion relief proposal to widen SR 522 from the existing two lanes to four lanes with median separation from the Cathcart Road vicinity (Snohomish River Bridge) to US 2. The proposed action evaluated in this EA includes a new bridge across the Snohomish River, a wildlife crossing near milepost 22, improvements to the 164th Street SE (W Main Street) interchange, and a new ramp connection and improvements to the US 2 interchange.

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Contact David Edwards with requests for copies of the EA.
The cost of this document is \$64.00, which does not exceed the cost of printing and mailing.

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ACRONYMS

B		N	
BMP	best management practice	NAAQS	National Ambient Air Quality Standards
BNSF	Burlington Northern Santa Fe	NEPA	National Environmental Policy Act
C		NGVD	National Geodetic Vertical Datum
CFR	Code of Federal Regulations	NMFS	National Marine Fisheries Service
CO	carbon monoxide	NOAA	National Oceanic Atmospheric Administration
Corps	United States Army Corps of Engineers	R	
D		RCI	residential, commercial, and industrial
dBA	A-weighted decibels	RCW	Revised Code of Washington
DNS	Determination of Non-Significance	ROD	Record of Decision
E		S	
EA	Environmental Assessment	SEPA	State Environmental Policy Act
EIS	Environmental Impact Statement	SR	State Route
EPA	United States Environmental Protection Agency	T	
F		TDAs	threshold discharge areas
FEMA	Federal Emergency Management Agency	TESC	temporary erosion and sediment control
FHWA	Federal Highway Administration	TSS	total suspended solids
FONSI	Finding of No Significant Impact	U	
G		US 2	United States Highway 2
GHG	greenhouse gas	USC	United States Code
H		USFWS	United States Fish and Wildlife Service
HPA	Hydraulic Project Approval	W	
HRM	Highway Runoff Manual	WAC	Washington Administrative Code
I		WDFW	Washington Department of Fish and Wildlife
IPCC	Intergovernmental Panel on Climate Change	WRIA	Water Resource Inventory Area
L		WSDOT	Washington State Department of Transportation
Leq	equivalent continuous noise level		
LOS	level of service		
M			
MP	milepost		
MSAT	mobile source air toxics		

Chapter 1 Summary

1 What is the project and where is it located?

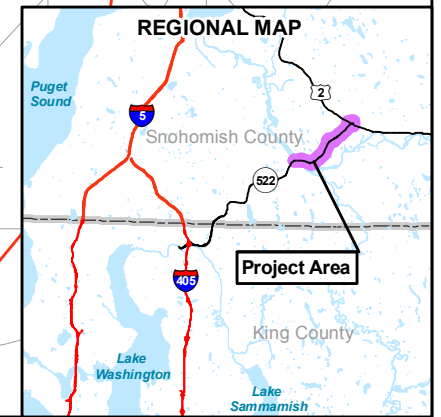
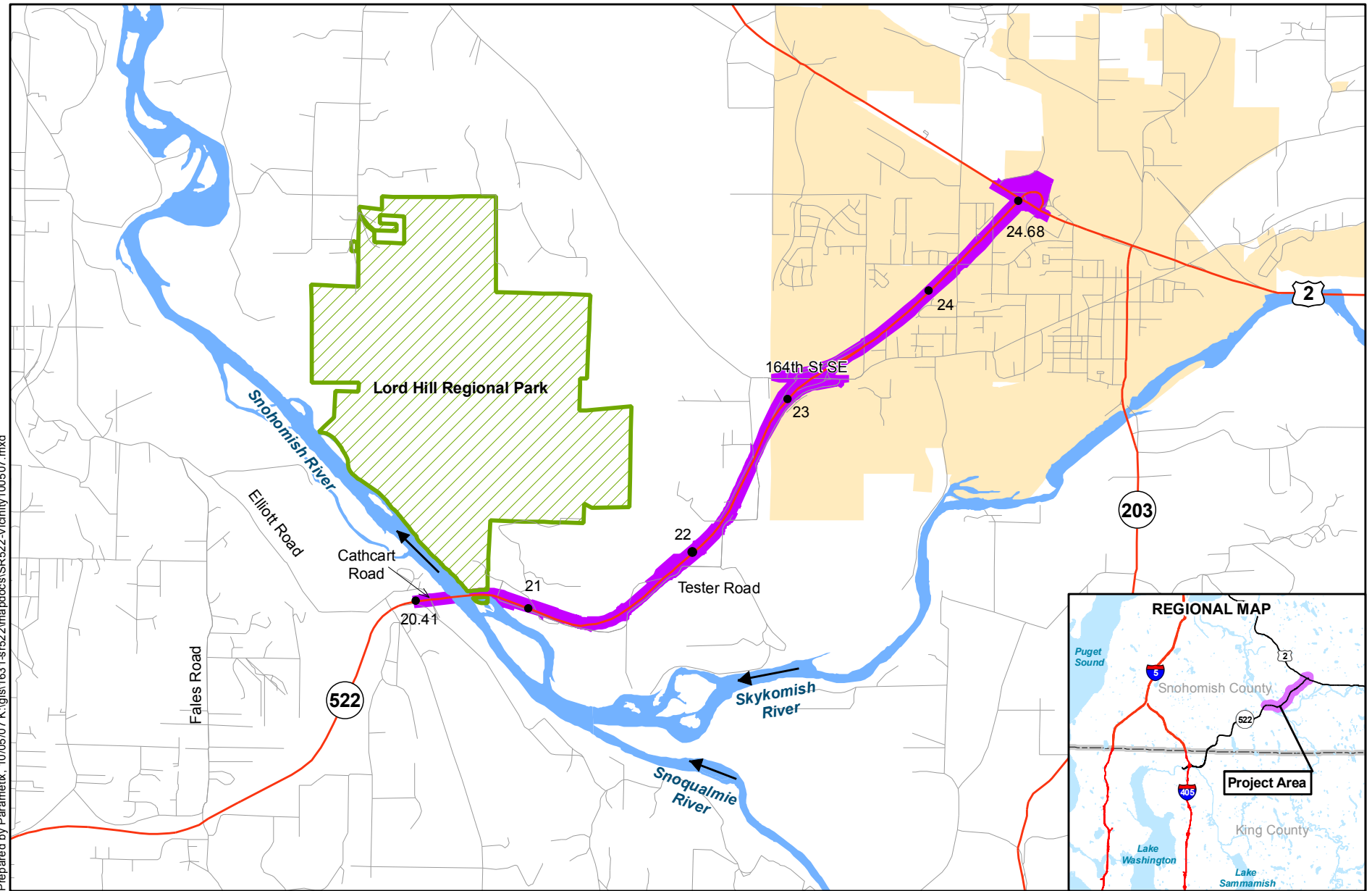
The Washington State Department of Transportation (WSDOT) and the Federal Highway Administration (FHWA) propose to improve and widen a 4.3-mile corridor of State Route (SR) 522. The project begins in Snohomish County near Cathcart Road at milepost (MP) 20.41. The project ends at United States Highway 2 (US 2) at MP 24.68 in the City of Monroe, as shown in Exhibit 1-1. A new ramp from eastbound SR 522 to eastbound US 2 ties in at MP 14.51 of US 2. Improvements on US 2 will extend from Cascade View Drive (MP 14.13) to SR 203, also known as Lewis Street (MP 14.92).

This project will be built to meet current WSDOT design standards and includes the following improvements:

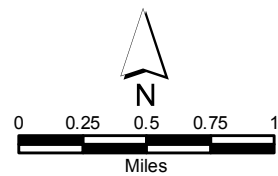
- Widening SR 522 from one lane in each direction to two lanes in each direction.
- Providing a median to separate eastbound and westbound traffic to reduce head-on collisions.
- Building a new bridge across the Snohomish River.
- Improving two existing interchanges in Monroe.

This project is one of several projects that compose planned improvements on a 10-mile section of the SR 522 corridor extending from SR 9 in Woodinville to US 2 in Monroe. These improvements make up the easternmost portion of the 10-mile section of planned improvements.

Prepared by Parametrix, 10/05/07 K:\gis\1631-sr522\mapdocs\SR522-Vicinity100507.mxd



Parametrix



Legend

- Highways
- Local Roads
- Parks
- Existing Right of Way
- Monroe City Limits
- Mileposts
- Stream Flow Direction

Exhibit 1-1
**SR 522 Project
Vicinity Map**

2 Why is the project being proposed?

The purpose of the project is to improve safety and operations, reduce congestion, and improve current and future mobility for traffic in the SR 522 corridor from the Cathcart Road (also known as Elliott Road or High Bridge Road) vicinity to US 2. As the surrounding population continues to grow, collisions will likely increase and traffic mobility will deteriorate further. The improvements in the corridor are needed to safely accommodate the existing and growing number of cars and freight traveling on SR 522.

The proposed project will address traffic congestion and safety issues by upgrading SR 522 to meet current design guidelines for a multi-lane highway.

3 What alternatives are being considered?

WSDOT is considering two alternatives in this Environmental Assessment (EA)—the proposed action and the No Action Alternative. The proposed action will widen the existing roadway to four lanes almost entirely within WSDOT right-of-way. The alignment of the SR 522 roadway will only change slightly where it crosses the Snohomish River and where the on- and off-ramps at the 164th Street SE and US 2 interchanges will be reconfigured.

As part of determining the configuration of the proposed action, WSDOT evaluated options for crossing the Snohomish River in the *SR 522 – Cathcart Road to US 2 Snohomish River Bridge Crossing Screening Report* (WSDOT 2006a). A memo summarizing other design and route options considered but rejected for the proposed action is provided as Appendix A.

The No Action Alternative will only conduct short-term minor construction as needed to maintain and repair the roadway for continued operation.

Why does WSDOT need a new Snohomish River Bridge?

The new Snohomish River Bridge is needed to separate the different directions of traffic and accommodate future traffic volumes. The existing bridge is only wide enough for two lanes

of traffic, and widening it is not feasible. The new bridge will help to improve safety and mobility on SR 522 and reduce the number of severe vehicle collisions. The new bridge will be built adjacent to the existing bridge as shown in Exhibit 1-2.

Exhibit 1-2

Visual Simulation of SR 522 Snohomish River Bridge



4 How much will it cost to build the project and how long will it take?

The 2007 Legislative budget for the project was \$169.1 million based on the 2007 Legislative budget. The 2003 Nickel Transportation Funding package provides nearly \$169 million. The project also has about \$140,000 available from other funding sources. This budget is based on preliminary planning estimates. Actual project costs could be different as the roadway design progresses, need for right-of-way purchase is finalized, and mitigation plans are completed.

Construction would take approximately 3 years and is scheduled to begin in the summer of 2010 and be completed by the end of 2013.

5 How will the project affect transportation?

The proposed action will improve traffic and safety conditions by providing two lanes in each direction and a median separating the eastbound and westbound traffic. SR 522 will operate at or near the highway's posted speed limit of 55 miles per hour, under normal conditions, during the peak morning and afternoon commute hours with the proposed action. The additional lanes will increase gaps between vehicles, decreasing the probability of vehicle collisions.

A new roundabout at the intersection of 164th Street SE and the SR 522 westbound on- and off-ramps, shown in Exhibit 1-3, will reduce traffic delays and queues that occur at the existing intersection. Improvements will also be made to the roundabout at 164th Street SE and the SR 522 eastbound on- and off-ramps to improve traffic flow, shorten vehicle queues, and provide additional space on the eastbound off-ramp for vehicles waiting to pass through the intersection.

To improve traffic and safety conditions at the SR 522/US 2 interchange, WSDOT will construct a new ramp between eastbound SR 522 and eastbound US 2 as shown on Exhibit 1-4. An additional eastbound lane will be added on US 2 from the end of the new ramp to SR 203/Lewis Street/Chain Lake Road. An additional westbound lane will be added on US 2 between SR 522 and Cascade View Drive. These improvements will provide additional capacity while reducing the volume of traffic at the signalized intersection of SR 522 and US 2.

What is a queue?

A queue is the line of vehicles that is waiting to move through an intersection or congestion point.

6 How will the project affect people?

In addition to improving operations and safety for people traveling on SR 522, the project will affect the community because of expected changes to noise levels, needed property acquisitions, and changes to views.

Exhibit 1-3

Visual Simulation of the Proposed Roundabout at the 164th Street SE and SR 522 Interchange



Exhibit 1-4
Visual Simulation of SR 522 and US 2 Interchange



People in the SR 522 corridor will experience noise levels ranging between 59 and 72 dBA L_{eq} during peak hours with the proposed action, which is an increase of 3 to 4 dBA over existing conditions. Thirty-five residential land uses are predicted to have noise levels equal to or above the WSDOT noise criterion of 66 dBA L_{eq} . Noise levels at 8 of the 35 locations currently exceed WSDOT criteria. South of 164th Street SE, noise mitigation was considered but was found to not be cost-effective due to the area's topography and rural character. However, in the urban neighborhoods north of 164th Street SE, noise levels are expected to decrease slightly. This is because a large number of vehicles exit SR 522 at 164th Street SE, and the highway would be on an embankment with a solid crash barrier (for example, a Jersey barrier). The crash barrier would deflect sound from SR 522 and allow it to disperse above the nearby residences.

Without the project, noise levels along the corridor are predicted to range from 56 to 69 dBA L_{eq} during the peak evening traffic hours. The range is slightly less than the proposed action because the highway will not be widened. However, in the urban neighborhoods north of 164th Street SE, noise will more directly affect nearby residences because the crash barriers that help disperse the sound with the proposed action will not be installed.

The project plans to partially or fully acquire 11 properties. Seven of the 11 properties will be acquired for the stormwater treatment facilities, including four vacant properties, two businesses, and a pasture. The remaining four properties will be acquired to accommodate the highway widening along a 2,000-foot stretch of SR 522 at Bald Hill where the existing right-of-way is not wide enough to cut into the steep slopes. A residence on one of the four properties will be displaced. The widening of the right-of-way is outside of the Lord Hill Regional Park boundaries. Local and regional comprehensive plans are mutually compliant with WSDOT transportation plans for SR 522.

What is a dBA?

Sound levels are expressed on a logarithmic scale in units called decibels (dB). A-weighted decibels (dBA) are the commonly used frequency that measures sound at levels that people can hear.

To the human ear, a 1- to 3-dBA change is hard to distinguish, but a 5-dBA change in noise level is readily noticeable. A 10-dBA increase sounds like the noise level has doubled.

A noise measurement of 50 dBA would sound like light traffic to a person standing 100 feet away, and a noise level of 70 dBA would sound like a vacuum cleaner to a person standing 10 feet away.

What is L_{eq} ?

L_{eq} is the average noise level over a specific period of time, such as hourly.

Views will remain similar to what they are today. However, because the roadway is going to be wider, some of the mature vegetation that blocks or shields views will be removed. This may expose some adjacent properties to light and glare that was previously blocked. These effects are expected to be minimal as the roadway is located on an embankment through urban areas of the corridor. WSDOT will develop a roadside restoration plan for the project that will identify where vegetation will be replaced, if applicable.

The proposed action is not expected to affect neighborhood character or environmental justice populations or change existing land uses in the area. Once the project is completed, public services are expected to benefit because safety and mobility will be improved on SR 522.

7 How will the project affect ecosystems?

The proposed action will affect several elements of the ecosystem, including stormwater, streams, wetlands, fish, wildlife, vegetation, and floodplains. Stormwater from the 31.8 acres of existing and 21.4 acres of new impervious surface area will be treated at stormwater facilities. Once the water is treated, it will be discharged into the Snohomish River or tributary streams to the Snohomish River. Stormwater runoff from the existing impervious surface area is currently not treated before it is discharged, and the proposed treatment will benefit the water quality in streams and conditions for fish over the No Action Alternative.

Approximately 1,030 linear feet of stream channel will be placed in culverts or filled. Of this total quantity, about 205 feet occur on salmonid-bearing streams. Fish passage conditions will be improved by replacing two culverts.

Fish habitat will be reduced by about 80 square feet where the new pier (support column) for the bridge over the Snohomish River is placed. The river is wide in this location, so the new pier is not expected to alter fish migration. Because the bridge will be built high above the river, shading impacts will be minimal.

What is Environmental Justice?

Environmental justice is a term used in a federal executive order issued in 1994. The executive order requires federal agencies to provide affected minority and low-income populations opportunities to be involved in projects. The executive order also requires federal agencies to make sure projects do not disproportionately affect these traditionally underserved groups.

What is an impervious surface?

A surface such as concrete or asphalt, where water runs off the surface rather than through it, is an impervious surface.

What is a salmonid?

A salmonid is any fish that belongs to the Salmonidae family, including salmon, trout, char, and whitefish.

The proposed action will fill or clear about 5.7 acres of wetland and 9.9 acres of buffer to widen SR 522 and construct the stormwater facilities.

The loss of some wetlands, buffers, grass/shrub, and forested habitat may affect some species such as raccoons, opossums, birds, and amphibians that live in the area. However, adverse effects to vegetation and wildlife species are not expected because habitat is available in the area and mitigation measures will be in place.

Based on a preliminary analysis, the new bridge piers will result in an approximately 0.05-foot increase in the 100-year base flood elevation upstream of the bridge. Because this is a relatively small increase compared to the total flood depth, this increase is not likely to affect scour or flooding severity.

Although approximately 27,000 cubic yards of fill material will be placed within the 100-year floodway fringe to construct portions of the road alignment and stormwater facilities, this amount is very small compared to the total volume of the area's floodplain. Thus, this fill is not expected to have major adverse effects to conveyance or the occurrence of Snohomish River floods at various stages. WSDOT will provide compensatory flood storage, in compliance with the Snohomish County Code.

8 Will the project affect cultural resources, historic resources, or public lands?

The project should not adversely affect cultural or archaeological resources because the cultural resources inventory did not identify any structures, properties, or resources on or eligible for the National Register of Historic Places or other local historical registers within the area of potential effects. A professional archaeologist will monitor ground-disturbing activities in areas with a moderate to high probability for resources so that any undiscovered resources are protected.

A temporary access road will be built on public land through Lord Hill Park to access the construction area around the new

Snohomish River Bridge. Following construction, the access road will be removed and this area will be restored.

9 How will impacts from the proposed action be avoided or minimized?

The project is being designed to avoid and minimize impacts where feasible. Mitigation measures will be in place to protect the community and environment from construction and operational impacts associated with the SR 522 project.

The specific measures to minimize project effects will be outlined as part of the local, state, and federal permits and approvals. A preliminary list of mitigation commitments is provided in Appendix F.

10 What are the benefits resulting from this project?

The project improvements will create several benefits, including:

- **Safety.** Separating the two directions of traffic is expected to reduce serious vehicle collisions. The additional lanes will create more space between vehicles.
- **Mobility.** Congestion on SR 522 and on US 2 and City streets near SR 522 will be reduced, which will improve mobility in the area.
- **Water Quality.** Stormwater from the existing and new paved areas in the corridor will receive water quality treatment.
- **Fish and Wildlife.** Fish passage through two culverts will be improved and a wildlife crossing will be built.
- **Noise.** Between 164th Street SE and US 2, new crash barriers will disperse traffic noise above neighborhoods rather than focus it directly at adjacent existing residences.

11 What effects will the No Action Alternative have?

Traffic congestion along SR 522 and in the city of Monroe will continue to increase and likely cause the collision rate to rise

with the No Action Alternative. Other travel routes in the area are limited because of the need to cross the Snohomish River.

Only routine maintenance on SR 522 would occur. In addition to routine maintenance of the existing Snohomish River Bridge, WSDOT would seismically retrofit the existing bridge columns in the future under a different environmental review process. Seismic retrofit of the existing Snohomish River Bridge superstructure and installation of upgraded guardrails has already been completed.

Under the No Action Alternative, stormwater treatment and noise abatement will remain substandard.

12 What is the environmental and decision making process for the project?

In 1994, the SR 522, SR 9 to SR 2 Final Environmental Impact Statement (EIS) analyzed safety and capacity needs in the entire corridor. Several changes in environmental regulations, funding, and the endangered species list have made further National Environmental Policy Act (NEPA) review necessary. Some of these same changes caused the need to update analysis of work proposed in the 1994 EIS as separate projects. This is the main reason to analyze the safety and capacity improvements for SR 522 from the vicinity of Cathcart Road to US 2 in this EA.

In 2006, the project team revisited the screening of the bridge options, began preparing the preliminary roadway design, and scoped the project with agencies and tribes. WSDOT used the results of these tasks, along with the results of public and agency scoping and discipline report evaluations, to confirm the bridge alternative and discuss which design options for the roadway design to evaluate and to identify the appropriate level of environmental documentation for the project, which in this case is an EA.

If no substantial effects are identified at the close of the comment period for the EA, FHWA will issue a Finding of No Significant Impact (FONSI). WSDOT will adopt these two NEPA documents under the provisions of State Environmental

Policy Act (SEPA) and issue a Determination of Non-Significance (DNS).

13 What permits will be required to implement the proposed action?

The following is a list of permits or approvals that may be required according to the design features of the proposed action and its effects:

Federal

- Section 404 and Section 10, Clean Water Act, Permit – U.S. Army Corps of Engineers and U.S. Environmental Protection Agency
- Section 7, Endangered Species Act, consultation (Chinook salmon, bull trout, steelhead) – U.S. Fish and Wildlife Service; National Marine Fisheries Service
- Coast Guard Section 9

State

- Hydraulic Project Approval – Washington Department of Fish and Wildlife
- National Pollutant Discharge Elimination System Stormwater Permit – Washington State Department of Ecology
- Section 401, Clean Water Act, Water Quality Certification – Washington State Department of Ecology

County and City

- Snohomish County and the City of Monroe Critical Area Ordinances
- Snohomish County Shoreline Substantial Development Permit
- Snohomish County Floodplain Development
- Snohomish County Noise Variance
- City of Monroe Noise Variance

